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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,404	02/18/2004	Porter C. Shannon	2003U038,US	1865

7590 10/01/2004

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EXAMINER

LU, C CAIXIA

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 10/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/781,404	SHANNON ET AL.	
	Examiner	Art Unit	
	Caixia Lu	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/18&5/19&6/21/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, the "multi-reactor polyethylene compositions possessing a density of between 0.940 and 0.970 g/cm³ and an I₂₁ value of from 4 to 20 dg/min" lacks definition because the molecular weight distribution or the melt flow ratio is not defined. Without molecular weight distribution limitation, the melting temperature of the "multi-reactor polyethylene compositions" can not be determined. As a matter of fact, the multi-reactor polyethylene compositions can even be a bHDPE which encompasses the bHDPE of the instant claims.

Claim Rejections - 35 USC § 102/103

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-21 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kuroda et al. (US 4,414,369), Nummila-Pakerinen et al. (WO 99/51649, the US equivalent US 6,562,905 is referred hereinafter as Nummila), and Nowlin et al. (US 5,539,076) independently.

The instant claims are directed to a film of ethylene polymer (bHDPE) having a density between 0.94-0.97 and a gel content of than less 100, with the characteristics of (i) I_{21} of 4 to 20 dg/min, and $T_m \leq 35-3.3(I_{21})$, or (ii) a high molecular weight component of a weight average molecular weight of grater than 50,000 and a low molecular weight component of average weight molecular weight of less than 50,000 and M_w/M_n of greater than 35.

Kuroda teaches a bHDPE that can be used to make thin film prepared in a two stage process in the presence of Ziegler catalyst having densities greater than 0.95, and melt flow ratio of greater than 100, and I_{21} in the range of the instant claims (col. 1, lines 23-25; col. 3, lines 58-63; col. 5, lines 32-38; and Examples 1-6). It is noted that Kuroda does not expressly disclose the I_{21} in the Examples, however, I_{21} can be calculated from the disclosed melt indexes and the flow parameters of the working example: $I_{21} = (\text{melt index}) \times 10^{(\text{flow parameter})}$. The calculated I_{21} encompass that of the instant claims. It is understood that the melt index and melt flow ratio of the polymer are correlate to the molecular weight and molecular weight distribution respectively, the higher the molecular weight, the lower the melt index, the larger the melt flow ratio, the

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broaden the molecular weight distribution. Although Kuroka does not expressly teach the molecular weight and gel content of the bimodal polymer, based on the melt index, the melt flow ratio and good workability, one would have expected the molecular weight, molecular weight distribution and gel content limitations are inherent in Kuroda's bHDPE.

Nummila teaches a bimodal film-making HDPE having a density in the range of 0.940 to 0.960 g/cm³ and MFR₂₁ (same as I₂₁) of 3-50, and gel content of less than 56 (col. 2, lines 31-62; col. 5, lines 5-13; col. 8, lines 10-28; and Examples 1-20). Based on the disclosed melt flow rate and melt flow rate ratio, the molecular weight and molecular weight distribution limitation are expected to be inherent in Nummila's bHDPE for the same analysis as shown above.

Similar the rejections are made over the teaching of Nowlin (col. 3, lines 1-15 Example D of col. 12) for the similar analysis as shown above.

Even if the claimed properties are not inherent in the polymers of the prior art examples, it would still have been obvious to a skilled artisan to arrive at the claimed subject matter because it appears that the claimed subject matter is within the generic disclosure of the prior art and expected to work.

Once a product appearing to be substantially identical is found and a 35 USC 102/103 rejection made, the burden of proof is shifted to the applicant to show an unobvious difference. In re Fitzgerald, 205 USPQ 594. In re Fessmann, 180 USPQ

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324. Applicants have not met their burden to demonstrate an unobvious difference between the claimed product and the products of the prior art examples.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (571) 272-1106. The examiner can normally be reached from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful and the matter is urgent, the examiner's supervisor, David Wu, can be reached at (571) 272-1114. The fax numbers for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1700.

A handwritten signature in black ink, appearing to read 'Caixia Lu', is positioned above the printed name and title.

Caixia Lu, Ph. D.
Primary Examiner